[TITLE Slide] Hello, my name is Brady E. Hamilton. Elizabeth Arias and I are from the Division of Vital Statistics of the National Center for Health Statistics. We are pleased to participate in this conference. We have been asked to provide a brief overview of vital statistics in terms of the new Office of Management and Budget standards for race and ethnicity and to answer your questions regarding this new directive and its effects on the vital statistics system.

[VITAL STATISTICS Slide] I shall speak briefly about the following: the relationship between vital statistics and population estimates, the source of vital statistics in terms of the system of registration, and documents, the nature of race and Hispanic origin on birth and death certificates, vital statistics data on race and Hispanic origin resulting from these items, accuracy of items on race and Hispanic origin on vital records, and future developments in vital statistics as these bear on race and Hispanic origin information.

[RELATIONSHIP Slide] First, let me underscore the key and integral relationship between vital statistics and population estimates. Most of you are familiar with the basic estimating equation of population change, which is, that population at time one equals the population at time zero plus the balance of the number of births, minus the number of deaths, plus the number of immigrants, minus the number of emigrants, occurring for the period since time zero. To measure population change on an annual basis, the vital records system provides two of the four components of population change. In this, vital statistics are essential to population estimation. However, vital statistics - that is, birth and death (I am not considering other vital events such as abortions, fetal deaths, marriages, and divorces), are dependent on population counts and/or estimates to compute the occurrence of these demographic events.

Information on births and deaths is not very useful unless it can be expressed in relative terms, that is, as the number of births or deaths occurring in a population at risk for a given period of time, measured as a rate. Moreover, for both social and health assessment and analysis, it is important to know if birth rates or death rates vary by socio-demographic group, such as by age, sex, occupation, marital status, educational attainment, geographic area, as well as by race and ethnicity. Thus, the number of births or deaths occurring to members of a population, the numerator of the vital rate, must be compared to all members of that population, either a count or a population estimate, the denominator of the vital rate, for any meaningful interpretation of these events. For example, to calculate the 1999 age-specific fertility rate among Mexican American women, aged 15-19 years, we have to have the number of births to this specific group, in 1999, readily available through the national vital statistics system; and, we must have an estimate of the total number of Mexican-American women, aged 15-19 years, in 1999, which can be obtained from the Census Bureau.

From this example, we see the interdependency between vital statistics and population estimates. Vital records provides to the Census Bureau the counts of two of the components of population change - births and deaths; while the Census Bureau provides the National Center for Health Statistics and the States with population counts or estimates that are essential for the analysis of vital statistics.

[SOURCE Slide] What is the source of vital statistics in the United States? First, let me say that the national vital statistics system is very distinct from the Census. While the Census and population estimates are produced by the Federal government, vital records are produced by each State. The Census is mandated by the United States Constitution. The national vital statistics system has no such mandate. It is

reliant upon the States. Registration of vital records occurs in the States and, as a consequence, the vital statistics system is a decentralized system; the Federal government - and specifically the National Center for Health Statistics - is dependent upon the cooperation of the States to maintain the national data base of births and deaths and other demographic events.

As a consequence, the entire vital statistics system is built on cooperation, collaboration, and intense interaction and consultation between States and the Federal government. The Federal government cannot mandate the content of vital statistics; it can recommend, negotiate, and provide financial inducements; but, it cannot mandate. The vital statistics system has been eminently successful in maintaining this cooperative effort between the Federal government and the States, through common standards for data collection (which includes definitions and reporting requirements), data production, and data dissemination, which are incorporated into cooperative agreements, signed annually between the National Center for Health Statistics and the States, and through Model Laws and Regulations developed cooperatively between the National Center for Health Statistics and the States.

The United States vital records system has had universal coverage since 1933, when the national birth and death registration areas were completed. Until 1946, vital statistics was a function of the Census Bureau. Since then, national vital statistics has been a function of the national health agency, presently the United States Department of Health and Human Services. Prior to the late 1970's, births and deaths were compiled at the national level from microfilm copies of the records; but these events were also compiled independently by the States for their own purposes. Subsequently, to improve State and Federal data comparability and to eliminate duplication of effort,

vital statistics were recorded by the States on data tapes or transmitted electronically for both State and Federal purposes using specifications from the National Center for Health Statistics.

I would like to say a few words about our source documents from which we create the national birth and death data bases. As previously mentioned, birth and death certificates vary among the States. However, a high degree of comparability among the States is ensured by adhering, in general, to the United State Standard Certificates of Birth and Death, which are promulgated by the National Center for Health Statistics, and which are revised approximately every ten years. These model certificates are developed through a continuous process which involves representatives of the States as well as experts in the areas of medicine, law, epidemiology, demography, health, records administration and management, and the funeral industry. The process of revising the vital records takes several years beginning with an initial survey of the data consumers and completing with the actual implementation of the new certificates by the States. We are currently using model certificates from the 1989 revision; the next model certificates are likely to be implemented in 2003.

Please refer to copies of the United States Standard Certificate of Live Birth and the United States Standard Certificate of Death available on DataSpeak web site. You will note at the bottom of the certificate, the implementation date of 1989, and the Office of Management and Budget approval of the standard certificates. Most of the certificates used by the States closely follow these models. On occasion, States rearrange the items and/or add items that are of particular interest to their constituency, but which are not part of the national data base. Nevertheless, for those core items of

interest at the national and State levels, the format and content of the questions are virtually the same.

[RACE ITEMS Slide] Turning now to the race and Hispanic-origin items currently in use on the birth certificate, look at item 26, and for Hispanic-origin, item 25. A few States collect information on other ethnicities. You will notice that the information requested on births is the race and Hispanic origin of the mother and the father, not the race and Hispanic origin of the child. Demographic information on birth certificates is completed usually in the hospital setting with the mother as the informant, so the information is largely self reported; and, therefore, can be considered a reasonably accurate and reliable assessment of the race of the mother and father, particularly the race and Hispanic origin of the mother.

For the death certificate, the item on the race of the decedent is number 15, and Hispanic origin is number 14. In contrast to the birth certificate, where the information is provided by the mother and therefore may be considered essentially self-reported, on the death certificate the information is, by necessity, provided by an informant, often but not always a family member. In the case of race or Hispanic origin, the information - if not provided by an informant - will be inferred occasionally by the funeral director based on the name of the decedent and/or observation of the decedent. As a consequence, information on the race and Hispanic origin of decedents may differ considerably from the race and Hispanic origin that the individual would have self-reported in a census or a survey. The National Center for Health Statistics has been able to statistically assess the difference in race reporting on death certificates and surveys by linking death certificates with the Current Population Survey. I shall discuss the results of the comparison later.

[VITAL STATISTICS Slide] What does the national vital statistics system produce in terms of race and ethnicity? The simple answer is a great deal. Race has been an essential variable in vital statistics analysis from the beginning of the national system. Currently, birth and death data are reported by all registration areas in eight categories: White, Black, American Indian, Chinese, Japanese, Hawaiian, Filipino, and Other Asian or Pacific Islander (API). In addition, beginning in 1992 a number of States began providing information on API specified subgroups. These States, which now number ten, account for most of the population of these groups in the United States. The subgroups in the API category are specifically Vietnamese, Asian Indian, Korean, Samoan, Guamanian, and remaining API. The National Center for Health Statistics has published reports on the fertility and mortality of these subgroups. Hispanic origin is shown for five subgroups: Mexican, Puerto Rican, Cuban, Central and South American, and Other and unknown Hispanic. The reporting area for Hispanic origin grew during the 1980's until 1993, when all registration areas were included for births, and 1997 when all areas were included for deaths.

In routine vital statistics reports - such as *Vital Statistics of the United States* and *Health of the United States,* race is generally aggregated into the four categories mandated in 1977 by the Office of Management and Budget: White, Black, American Indian, and Asian or Pacific Islander. Presentation of detailed race and specified Hispanic origin for vital statistics rates is limited by the availability of corresponding population estimates. This is particularly true for presenting rates at the subnational level, such as States, cities, and counties.

At present, the Census Bureau provides the National Center for Health Statistics with postcensual estimates of the population of the United States and States by race

and Hispanic origin. The race estimates are demographic estimates, while those of Hispanic origin are based on the *Current Population Survey*.

A sampling of the extensive use of race and Hispanic origin in the analysis and presentation of vital statistics data from our most recent annual reports on Births and Deaths is available on the National Center for Health Statistics web site. Information is also available in published and unpublished tables of *Vital Statistics of the United States*, available in hardtop through 1993, again on the National Center for Health Statistics web site, and soon to be available on CD-ROM. In addition to the annual reports, which likewise are available in hardtop and over the Internet, the National Center for Health Statistics produces public use data tapes and CD-ROM's. Currently, the National Center for Health Statistics has detailed information on births and deaths by race and Hispanic origin, in compliance with the original Office of Budget and Management guidelines.

[ACCURACY Slide] What do we know about the accuracy of vital records information, particularly, for race and Hispanic origin? For births, our most recent review was a comparability study of the birth certificate and the 1988 National Maternal and Infant Health Study. That study found that the two sources were in agreement for the race of the mothers and fathers in over 98 percent of the cases; for Hispanic origin, the sources agreed for 98 percent of mothers and 96-98 percent of fathers. For deaths, we have more recent information based on linking a large number of death certificates with a series of Current Population Surveys (or, CPS) for the years 1979 to 1989. The results showed that counts of blacks and whites in the two sources were almost the same, and that record-by-record agreement was on the order of 98 percent; however, for American Indians, the CPS-reported race assignments to American Indian were 37

percent higher than on death certificates, for Asian or Pacific Islander 13 percent higher and for Hispanic 7 percent higher. On birth certificates, we would expect the correspondence to be much closer since the informants are generally mothers, not third parties. For infant mortality, we obtain race and Hispanic origin from the birth certificate of the infant, which was then linked to its corresponding death record. This "linked file" - initiated in 1985 - provides much more accurate infant mortality rates by race and Hispanic origin than can be obtained from death certificate information alone. The comparisons of infant mortality rates based on the general mortality file with those based on the National Center for Health Statistics linked file of infant deaths and live births are included with the material available on Data speak web site.

[FUTURE Slide] What about the future? How will vital statistics implement the 1997 Office of Management and Budget standards for data on race and ethnicity? This question ties in closely with United States Standard Certificate of Live Birth and the United States Standard Certificate of Death.

We are currently near the completion of developing the new standard certificates, which we anticipate that the States will implement in 2003. A copy of the revised certificates is included with the material available on Data speak web site; these model certificates are very close to what we expect the final versions to look like, though there may still be minor changes based on current tests and evaluations. The section on race and Hispanic origin on the birth certificate is items 21,22, 24, and 25; on the death certificates, it is items 52 and 53. The format of the race and Hispanic-origin items follows closely the items on the Year 2000 Census for the two reasons that we mentioned earlier (so that we can provide the Census Bureau with needed information for population estimates, and so that they, in turn, can provide NCHS and

the States with population estimates for calculating rates by race and by Hispanic origin).

Frankly, we do not know yet what kinds of information we shall get from the new vital records. How many mothers will provide information on more than one race, as compared with information provided in the Census? How many funeral directors will ask informants - often grief stricken - for information on more than one race for the decedent? On the mortality side, we are a bit skeptical that we shall have many responses of more than one race for the decedent. We expect the quality and completeness of these items to differ between birth and death certificates as they do now using the current version of the vital records. A few States have implemented the new format of race and Hispanic origin before the official implementation of the new standard certificates. California, Washington, Alaska, and Hawaii have begun with the year 2000, so we have some information on which the National Center for Health Statistics can make some assessments prior to 2003 when the revised certificates are implemented by all States. We are encouraged that preliminary testing of the new questions on race and Hispanic origin with recent or soon-to-be mothers has found a good understanding of the items and willingness to provide the information.

The National Center for Health Statistics is preparing for the new data. We are working closely with the Office of Management and Budget and the Census Bureau to develop similar edit procedures and tabulation specifications. The basic edits need to be similar so that the data for population estimates and for analysis from the two sources will match. Likewise, for tabulation purposes, we will closely follow the census model.

What are the issues that confront vital statistics in terms of implementing the new Office of Management and Budget standards? First, we need an assessment of the quality and completeness of reporting on birth and death records using the new format for race and Hispanic origin. The key is not just the validity of the responses, but how well they correspond to the information for the same individual on the census, so that NCHS and the States can construct meaningful measures of risk of birth and risk of death by socio-demographic characteristics. We believe that type of analysis can best be conducted by linking vital records to census records as was done in the past. We further believe that this should be an integral part of a national assessment program covering both the population estimates and vital records. We need to know how much quality and completeness varies by socio-demographic characteristics such as educational attainment, but especially by geographic area. We also need to assess how quality and completeness change over time and what statistical techniques should be used to bridge data collected under the 1977 and 1997 standards. It will not be sufficient to conduct a single match, but a program should be established for periodic assessments over time.

In summary, race and ethnicity are variables that are central to vital statistics analysis as well as to the contribution that birth and death information make to population estimation. We shall have to work closely with both the Census Bureau as well as the research community to address the issues posed by implementing the new Office of Management and Budget guidelines for race and ethnicity. Our goal needs to be to produce vital rates and population estimates for which race and ethnicity match one another as closely as possible. In terms of research and evaluation, we need

quantitative information on disparities between these two data sources, on the reasons for the disparities, and whether the disparities are changing over time. Thank you.